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USSN: 10/087,035

### **REMARKS**

In view of the following remarks, the Examiner is requested to allow Claims 1-11, 22, 27, 28, and 31-41, the only claims pending and under examination in this application.

Claims 12-21, 23-26, 29 and 30 have been cancelled. Claims 1, 4-7, 9-11, 22, 27 and 28 have been amended. Claims 31-41 have been added.

Independent Claims 1 and 27 are drawn to methods for array design and independent Claim 22 is drawn to array design systems. As amended, Claims 1, 22, and 27 include the limitation that the customer selects a gene of interest and provides this selection to a vendor who then curates the sequence for the gene of interest and designs probes to be included in the array design. Support for these amendments can be found in the original claims and throughout the specification, including in paragraphs [0064] and [0072] and in Figure 2.

Support for new claims 31-41, which depend from amended Claim 27, can be found in the original claims.

Support for the amendment to Claim 28 can be found in the specification in paragraph [0008] (fabrication of the designed arrays).

As no new matter is added by way of these amendments, entry of the amendments by the Examiner is respectfully requested.

### ***Objections to the Specification***

The specification of the present application was objected to for containing browser-executable code. In response, the Applicants have removed the browser-executable code from the specification as detailed in the amendments section, above. As such, this rejection may be withdrawn.

### ***Objections to the Claims***

Claim 1 is objected to by the Examiner because "customer selected" as recited in line 3 and "customer-selected" as recited in line 5 are inconsistent. The

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amendments to Claim 1 correct this inconsistency. As such, the Applicants respectfully request withdrawal of this objection.

***Claim Rejections - 35 USC § 112***

The Office Action states that Claims 1-16 and 22-28 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Claims 1, 10, 12, 15, 22, 23, 24, and 28 recite the phrase "according to" which the Examiner has deemed vague and indefinite. As requested by the Examiner, Claims 1, 10, 22 and 28 have been amended to contain clearer claim wording. Claims 12, 15, 23 and 24 have been canceled.

Claims 1, 4-7, 9-12, 14-16, 22, and 23 recite the phrase "said customer selected array design parameters" and/or "said vendor provided array design parameters" which the Examiner states lack clear antecedent basis. As requested by the Examiner, Claims 1, 4-7, 9-11 and 22 have been amended to remedy the lack of antecedent basis. Claims 12, 14-16, and 23 have been canceled.

Claim 4 recites the phrase "said array" which the Examiner states lacks clear antecedent basis. Claim 4 has been amended such that the phrase "said array" is now "said array design" which has appropriate antecedent basis in Claim 1.

Claims 9 and 14 recite the phrase "based on" which the Examiner states is vague and indefinite. Claim 9 has been amended to contain clearer claim wording. Claim 14 has been canceled.

Claim 27 recites the phrase "said gene of interest" which the Examiner states lacks clear antecedent basis. As requested by the Examiner, Claim 27 has been amended to remedy the lack of appropriate antecedent basis.

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Claim 28 recites the phrase "said complete array design" which the Examiner states lacks clear antecedent basis. As requested by the Examiner, Claim 28 has been amended to remedy the lack of appropriate antecedent basis.

The remaining claims are rejected for being dependent on a rejected claim.

Because each rejection of Claims 1-16 and 22-28 under 35 U.S.C. § 112, second paragraph, has been addressed by the Applicants, either by amendment or cancellation of claims, withdrawal of these rejections is respectfully requested.

***Claim Rejections - 35 USC § 102***

The Office Action states that Claims 1-16 and 22-28 are rejected under 35 USC § 102(e) as being anticipated by Zhou et al. (US 2003/0120432 A1) filed on November 26, 2002. Because the subject application was filed on February 27, 2002, the Examiner has relied upon the dates of provisional applications to which Zhou et al. claims priority in making this rejection.

Before considering the content of the provisional applications made reference to in Zhou et al., it is important to establish the date of conception of the presently claimed invention so that only those provisional applications that predate the conception of the invention are considered. The Applicants submit herewith the Declaration of Robert Kincaid under 37 C.F.R. §1.131 which provides a showing of facts that the inventor conceived of the claimed invention prior to the July 16, 2001. In light of this Declaration, the Applicants have considered the content of provisional applications cited in Zhou et al. that were filed prior to July 16, 2001 in considering whether this prior art reference anticipates the claimed invention.

Zhou et al. is a CIP of application 10/063,559 filed May 2, 2002, which claims priority to provisional application 60/288,429 filed May 3, 2001. Zhou et al. claims priority to provisional applications 60/265,103 filed January 29, 2001 and 60/301,298 filed of June 25, 2001. All other provisional applications to which Zhou et al. claims priority were filed on or after July 16, 2001. Therefore, the content of the '429, '103 and '298 provisional applications have been considered in responding to the

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anticipatory rejections made by the Examiner because only these three provisional applications were filed before July 16, 2001.

The invention as currently claimed is drawn to systems and methods for gene-based array design that includes selecting, by a customer, at least one gene of interest and providing this selection to the vendor. The customer may also provide additional array design parameters, including probe design parameters and/or array layout design parameters. The vendor then curates sequence information for the gene(s) of interest and selects a plurality of probes specific for the gene(s) of interest. The vendor provides additional array design parameters necessary for completing the array design. The parameters of array design now established, completion of the array design is done (either by the vendor or the customer). The invention thus allows the customer to provide select gene-based array design parameters (e.g., genes of interest and/or a probe design parameter) while leaving the more computationally complex aspects of array design to the vendor. This invention thus removes significant burden from customers interested in using custom arrays.

To anticipate a claimed invention, each and every element of the claim must be taught or suggested in a single prior art document (MPEP § 2131). Zhou et al. discloses methods for allowing a customer to provide specific parameters for a custom array design to a vendor which would be used in making a final custom array design. While a number of customer-provided custom array parameters are envisioned in Zhou et al., nowhere in the '429, '103 or '298 provisional applications is it taught or suggested that a vendor curate and select probes for a gene of interest provided by a customer. In these provisional applications, the customer is allowed to identify probes for a gene that have been pre-selected by the vendor to include on an array. New probes are not selected for genes of interest that are not in the vendor's database. In other words, if there are no pre-selected probes for a gene of interest to a customer, the methods disclosed in the relevant provisional applications in Zhou et al. do not curate a sequence for the customer selected gene and then select probes from that curated sequence. As stated above, the claimed invention includes gene sequence curation and probe selection by the vendor.

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Therefore, because the teachings of the relevant provisional applications to which Zhou et al. claim priority (i.e., the '429, '103 and '298 provisional applications) fail to teach or suggest each and every element of the claimed invention, the Applicants respectfully request withdrawal of the rejections under 35 U.S.C. §102(e).

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**CONCLUSION**

In view of the amendments and remarks above, Applicants respectfully submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone Michael Beck at (650) 485-3864. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1078 order number 10011076-1.

Respectfully submitted,

Date: April 13, 2005

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